

REMARKS

This Preliminary Amendment cancels without prejudice original claims 1-11 and substitute claims 1-10 in the underlying PCT Application No. PCT/EP00/00940, and adds without prejudice new claims 12-27. The new claims conform the claims to U.S. Patent and Trademark Office rules, and do not add new matter to the application.

In accordance with 37 C.F.R. § 1.121(b)(3), the Substitute Specification (including the Abstract, but without the claims) contains no new matter. The amendments reflected in the Substitute Specification (including Abstract) are to conform the Specification and Abstract to U.S. Patent and Trademark Office rules or to correct informalities. As required by 37 C.F.R. § 1.121(b)(3)(iii) and § 1.125(b)(2), a Marked Up Version Of The Substitute Specification comparing the Specification of record and the Substitute Specification also accompanies this Preliminary Amendment. Approval and entry of the Substitute Specification (including Abstract) is respectfully requested.

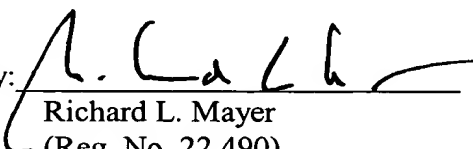
The underlying PCT Application No. PCT/EP00/00940 includes an International Search Report, mailed May 18, 2000. The Search Report includes a list of documents that were uncovered in the underlying PCT Application. A copy of the Search Report accompanies this Preliminary Amendment.

The underlying PCT application also includes an International Preliminary Examination Report and annexes thereto, dated May 4, 2001. An English translation of the International Preliminary Examination Report and annexes thereto is included herewith.

Applicants assert that the subject matter of the present application is new, non-obvious, and useful. Prompt consideration and allowance of the application are respectfully requested.

Respectfully Submitted,  
KENYON & KENYON

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By:   
Richard L. Mayer  
(Reg. No. 22,490)

One Broadway  
New York, NY 10004  
(212) 425-7200

[22750/493]

A SHOE, IN PARTICULAR A SHOE FOR SMALL CHILDREN

~~Background of the Invention~~

FIELD OF THE INVENTION

The present invention relates to a shoe, ~~in particular a shoe~~  
for small children, which ~~supports the development of the foot~~  
in a natural way and, ~~especially as a shoe when learning to~~  
walk, ~~promotes the first steps of a small child.~~

~~Related Art~~

for promoting a heel-to-toe motion of a foot.

BACKGROUND INFORMATION

Already in German Patent C 10 70 962, it was established that  
the rotational mobility of the heel part of the sole with  
respect to the forward part of the sole, in the sense of a  
wringing, is essential for an undisturbed sequence of  
development of the foot. In addition, in that publication it  
is described as known that the insole and/or the outsole of  
the footwear are provided in the area of the articulated point  
with cutouts that proceed from the edges of the sole and that  
~~are~~may be filled by inserts, which ~~are~~may be made of a more  
pliant material than that of the in- or outsole. In the area  
of the articulated point the width of the sole, which is  
furnished with the inserts, corresponds roughly to the  
dimensions that are established by the vertical projection of  
the foot, so that the foot is protected by the base of the  
shoe. The overall depth of these cutouts ~~can~~may be smaller  
than the overall width of the sole in the area of the  
articulation, the cutouts being wider in the area of the edge  
of the sole than in the area of the interior of the sole. In  
place of a single cutout, it ~~is~~may be also possible to assign  
to each edge of the sole a plurality of cutouts running  
roughly transverse to the longitudinal direction of the sole,  
whose edges, bordering a cutout, essentially run parallel to

MARKED-UP VERSION OF THE  
SUBSTITUTE SPECIFICATION

each other and whose width corresponds at least to the thickness of the sole.

On the upper side of the sole ~~is arranged~~ a molded footbed support may be arranged, which ~~can~~may be bonded in one piece to the material of the inserts that fill out the cutouts. The cutouts here ~~are~~may be situated mainly on the outer edge of the foot, so that the sole of the forward area of the foot is connected via a roughly centered crosspiece to the outsole of the rear area of the foot.

From German Patent U 87 14 923, it is known to use anatomically shaped shoe soles, which are anatomically formed in a natural way in accordance with the imprint of a healthy foot and which can be used for all shoes. It can be seen from the drawing that the sole in the area of the transition between the heel and the forefoot ~~is~~may not be shaped in accordance with the outline of the foot, but rather in accordance with its contact surface. Therefore, in this area, there ~~is~~may be a reduction in the width. The problem of rotational mobility is not described.

From German Patent C 43 16 237, it is also known to ~~provide that~~ a reinforcing element may be provided made of a fibrous material, which ~~is~~may be configured as a supporting plate and which also traces the foot contact surface in the area of the outer edge of the foot.

Despite the measures proposed here, it is believed that there remains a need for improvement in promoting unhindered physiological movement of the foot in all motions.

~~Presentation of the Invention~~

#### SUMMARY OF THE INVENTION

According to an exemplary embodiment of the present invention, the outsole in the area of the contraction has a connecting

piece having a degree of flexibility such that a torsion of the front of the foot with regard to the back of the foot is impeded as little as possible, and high flexibility in the area of the front of the foot is provided to the outsole regarding the motion of the foot, as a result of an appropriate profiling.

~~As a result of the~~ It is believed that a combination of an increased rotational mobility in the heel part of the sole with respect to the forward part of the sole, together with a zone of high flexibility in the ball of the foot area of the front of the foot, promotes the physiological heel to toe of the foot ~~is promoted~~ in all motions. In contrast to the related art, in which the flexibility is determined by the material selected and by the thickness of the sole, the flexibility of the sole according to an aspect of the above exemplary embodiment of the present invention is primarily achieved through the geometric configuration of the sole.

~~In this context~~ According to a further aspect of the above exemplary embodiment of the present invention, the contraction can be configured such that the area of the outsole in the front of the foot is connected via a crosspiece to the area of the outsole in the back of the foot. As a result, a single-piece injection-molding of the sole is possible.

~~It is believed that the above exemplary embodiment of the shoe according to the present invention~~ is particularly suitable as a shoe for small children, because it supports the first steps of the small child while making possible the natural play of the toes, as a result of which the foot can move in a natural manner.

~~Advantageously~~ It is further believed that the above exemplary embodiment of the shoe according to the present invention advantageously supports the development of the foot in a

natural way and, especially as a shoe when learning to walk, promotes the first steps of a small child.

5 According to a further aspect of the above exemplary embodiment of the present invention, advantageously, the  
profiling is executed in the form of parallel or ray-shaped grooves, which extend at least partially over the width of the shoe. ¶

10 According to a further aspect of the above exemplary embodiment of the present invention, the extension extends  
over the entire width of the shoe. It is believed that the extension over the entire width of the shoe is particularly  
15 advantageous, allowing in a variant of this aspect of the above exemplary embodiment of the present invention the  
profiling being able to be made of a plurality of materials of differing elasticities. As a result, it is possible to  
20 increase the flexibility overall while maintaining the necessary minimum thickness for manufacturing the sole and for  
achieving a sufficient stability of the sole.

~~It is advantageous to arrange~~ According to a further aspect of the above exemplary embodiment of the present invention,  
25 advantageously, the contraction of the outsole is arranged on the interior side of the shoe, because the movement of the  
foot in rolling from heel to toe is particularly pronounced in this area.

30 ~~¶According to a further aspect of the above exemplary embodiment of the present invention, the contraction can be~~ is  
extended into the area of the back of the foot, so that if a shoe heel is present, it is even partially chamfered. ¶ It is  
believed that a greater flexibility is achieved as a result.

35 ~~For improving the flexibility~~ According to a further aspect of the above exemplary embodiment of the present invention, the

thickness of the outsole is advantageously reduced to the thickness required for manufacturing. ~~In order to give the foot sufficient support despite the elastic sole, which is believed to improve the flexibility. According to a further aspect of the above exemplary embodiment of the present invention,~~ in addition to an anatomically shaped footbed, a heelplate or a flexible heel brace is provided for a heel guide, which is advantageously configured so that the Achilles tendon is free-

~~To improve the position of the foot, it is advantageous if, which is believed to give the foot sufficient support despite the elastic sole.~~

According to a further aspect of the above exemplary embodiment of the present invention, the outsole in the area in the back of the foot has a heel, which is believed to improve the position of the foot. ~~According to a variant of this aspect of the above exemplary embodiment of the present invention,~~ this heel extends under the heel bone of the child's foot in the direction of the forefoot and ~~can be~~ is narrowed in the area of the interior of the foot as a result of the contraction.

#### ~~Brief Description of the Drawing~~ BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, a children's shoe according to exemplary embodiments of the present invention is depicted. The following are the contents:

Figure 1 ~~depicts~~ shows an exemplary embodiment of a children's shoe according to the present invention in a view from below.

Figure 2 ~~depicts~~ shows the children's shoe from Figure 1 in a side view emphasizing a reinforced heel area.

Figure 3 ~~depicts~~ shows a further exemplary embodiment of a

children's shoe according to the present invention  
in a view from below, ~~and~~.

Figure 4 ~~depicts~~shows an enlargement of the sole of the  
children's shoe from Figure 3 in a side view.

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~~Execution of the Invention~~

DETAILED DESCRIPTION

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Figure 1 depicts the lower side of a outsole 1. Outsole 1 is  
subdivided into an area in the forefoot 2 and an area in the  
back of the foot 3, which are connected to each other by a  
connecting area 4. Connecting area 4 arises as a result of a  
contraction 5 on interior side 6 of foot 7, whose contour is  
indicated by dotted line. Also running along this dotted-line  
contour is the undepicted upper part, that extends underneath  
the foot, so that in the area of contraction 5 the upper part  
is without any covering from below by sole 1.

In area 3 in the back of the foot, a heel 8 is arranged, which  
is partially cut out in the area of contraction 5. Heel 8  
offers protection against slipping in climbing or going up  
stairs. In area 2 in the forefoot, a profiling 9 is provided,  
which extends from presupposed position 10 of the ball of the  
foot on interior side 6 of the foot to the exterior side of  
the foot.

Due to contraction 5, connecting area 4 is configured in a  
reduced width with respect to the projection surface of the  
foot, and in the depicted exemplary embodiment it is narrowed  
only on interior side 6 of the foot. However, it is  
advantageous to provide an appropriate contraction also on the  
exterior side of the foot. In this way, a connecting piece  
between the area of the forefoot and the area of the back of  
the foot arises.

In order to assure the foot sufficient support in the shoe  
despite the very flexible outsole, a heelplate or stiffener 21

is provided, which is depicted in Figure 2 and which is arranged in an upper part 22, the heelplate extending downwards in the area of the Achilles tendon, so that the Achilles tendon is free, the heelplate nevertheless being pulled up in the area of the front of the heel bone and extending beyond heel 8 to the exterior edge of the foot. Alternatively, a heel brace arranged on the exterior can also be used to generate an improved connection of the shoe to the foot in the heel area.

The children's shoe depicted in Figure 3, in the area of the toe joint, i.e., at the transition between the middle of the foot and the toes, has a profiling 9, extending over the entire width, in the form of crosspieces 9.1-9.4 and grooves 10.1-10.5. Taken together with contraction 5, a shoe of great flexibility is achieved in this manner, which little hinders the torsion of the foot and otherwise favors the motion of the foot in the area of the forefoot.

In Figure 4, an enlargement of the sole of the children's shoe from Figure 3 is depicted in a side view of the exterior side of the shoe. Profiling 9 can be seen in the form of crosspieces 9.1-9.4 and grooves 10.1-10.5, which can be filled at least partially by a second material. This embodiment has less bending resistance and therefore contributes to the plasticity while at the same time assuring a sufficient thickness of the sole for protecting the foot.

Crosspieces 9.1-9.4 widen in the direction of the exterior edge of the shoe, so that, over the width of the shoe, in response to the motion of the foot, the exterior edge of the shoe has less bending resistance in the sole than the interior edge of the shoe.

Beginning from heel 8, the thickness of the sole decreases not only as a result of the contraction, which is not visible in



this representation, but also as a result of the reduction in the thickness of the sole in area 11.

5 It is furthermore essential for comprehending the exemplary  
embodiments of the present invention, that the upper part of  
the shoe in the area of contraction 5 on the lower side of the  
shoe remains free, i.e., not covered by the sole. In the area  
of the exterior side of the foot, it is possible to configure  
10 the contraction as an arch that is covered only by a thin  
layer of sole material.

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Abstract

~~A shoe, in particular a children's shoe,~~ ABSTRACT OF THE  
DISCLOSURE

5 A shoe, having an outsole ~~(1)~~ and an upper part ~~(22)~~ that is  
connected thereto, the outsole ~~(1)~~ in the area between the  
forefoot ~~(2)~~ and the back of the foot ~~(3)~~ having a contraction  
~~(5)~~, does not of its own accord sufficiently promote the  
natural rolling motion of the foot when the foot is in motion  
10 and when the child takes its first steps.

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As a result of the fact that ~~t~~The outsole ~~(1)~~ in the area of  
the contraction ~~(5)~~ has a connecting area ~~(4)~~ having a degree  
of flexibility such that a torsion of the forefoot with  
respect to the back of the foot is impeded as little is  
possible, and that, in the area ~~(10)~~ of the forefoot ~~(2)~~, the  
outsole ~~(1)~~ is provided with a high degree of flexibility with  
respect to the motion of the foot as a result of a  
corresponding profiling ~~(9)~~,. Thus the natural motion of the  
child's foot can be maintained, while simultaneously providing  
sufficient protection for the child's foot during walking.

~~(Figure 1)~~